Mumbai University

QUESTION PAPER

October – 2016

[B.Sc.IT – SEMESTER: VI]
(CBSGS – 75:25 Pattern)

- ❖ **INTERNET TECHNOLOGIES**
- ❖ **DATA WAREHOUSING**
- ❖ **IPR AND CYBER LAWS**
- ❖ **PROJECT MANAGEMENT**

KAMAL T UNIVERSE

Mumbai University

[CBSGS – 75:25 Pattern]
(October – 2016)

PAPER - I

INTERNET TECHNOLOGIES

Time: 2 ½ Hours

<div align="right">

Total Marks: 75

</div>

N.B.: **(1)** *All Question are Compulsory.*
      (2) *Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.*
      (3) *Answer To The Same Question Must Be Written Together.*
      (4) *Number To The Right Indicates Marks.*
      (5) *Draw Neat Labeled Diagrams Wherever Necessary.*
      (6) *Use of Non – Programmable Calculator is allowed.*

Q.1 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) List functionalities of Physical Layer. Explain any four. **(5)**

(B) Change the following IP Address from Dated Decimal Notation to Hexadecimal Notation: **(5)**
    (i) *114.34.2.8*
    (ii) *129.14.6.8*
    (iii) *208.34.54.12*
    (iv) *238.34.2.1*
    (v) *192.177.23.15*

(C) List Multi-Byte options of IPv4. Explain any one with suitable example. **(5)**

(D) Explain the Auto configuration feature of IPv6. **(5)**

Q.2 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) Explain the working of Cache Control include of ARP. **(5)**

(B) List different types of ICMP Error Messages. Explain any two. **(5)**

(C) Write the inefficiencies in mobile IP. Give the solution for the same. **(5)**

(D) With suitable example explain the Distance Vector Routing Algorithm. **(5)**

Q.3 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) The following is a dump of a UDP Header in Hexa Decimal Format. **(5)**
<div align="center">

`CB8400D001C001C`

</div>

    (i) *What is the source port number?*
    (ii) *What is the Destination Port Number?*
    (iii) *What is the total length of the User Datagram?*
    (iv) *What is the length of the data?*
    Is the packet directed from a client to server or Vice Versa?

(B) Draw TCP Segment Format. Write the purpose of each field. **(5)**

(C) How Retransmission Time Out (RTO) is calculated in TCP? Explain with suitable example. **(5)**

(D) A TCP Connection is to ESTABLISHED State. The following events occur one after another: **(5)**
    (i) *A FIN Segment is received*
    (ii) *The application sends a "close" message*
    What is the state of the connection after each event?
    What is the action after each event?

Q.4 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) Explain the Question Record Format of DNS? **(5)**

(B) List various Chunks Wed by SCTP. Write purpose of each? **(5)**

(C) Draw and explain the DHCP Client Transition diagram? **(5)**

(D) How Name Compression is carried out in DNS? Explain with example. **(5)**

<div align="right">

[TURN OVER]

</div>

Q.5   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   List options used in TELNET. Write meaning of each.   **(5)**

(B)   Explain various Transmission Modes and File Data Structures used by FTP.   **(5)**

(C)   Explain the HTTP Request Message Format.   **(5)**

(D)   Assume there is a server with the domain name www.common.com.   **(5)**

    (i) *Show a request that retrieves the document / user/users/doc/doc1.*

    (ii) *Use at least two general headers, two request headers, and one entity header.*

    (iii) *Show the response to part for a successful request.*

Q.6   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   Write the phases for transferring a Mail Messages in SMTP.   **(5)**

(B)   List the SMTP Commands used to transfer messages between an MTA Client and an MTA Server. Write   **(5)**
    the purpose of any four.

(C)   Differentiate between POP3 and IMAP.   **(5)**

(D)   List and explain various flow characteristics.   **(5)**

Q.7   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   Compare IPv6 and IPv4 Protocols.   **(5)**

(B)   List various BGP Message. Write the purpose of each.   **(5)**

(C)   How is congestion handled in TCP? Explain.   **(5)**

(D)   Explain the association establishment process of SCTP.   **(5)**

(E)   List characters used to control program running on Remote Server. Write the purpose of each.   **(5)**

(F)   Explain Image Compression.   **(5)**

Mumbai University

Question Paper

[CBSGS – 75:25 Pattern]
(October – 2016)

PAPER - III

Data

Warehousing

Time: 2 ½ Hours   **Total Marks:** 75

N.B.: (1) *All Question are Compulsory.*
    (2) *Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.*
    (3) *Answer To The Same Question Must Be Written Together.*
    (4) *Number To The Right Indicates Marks.*
    (5) *Draw Neat Labeled Diagrams Wherever Necessary.*
    (6) *Use of Non – Programmable Calculator is allowed.*

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain Star Schema Model with example. **(5)**
(B) What is Source System? Briefly explain various layers in Data Warehouse Architecture. **(5)**
(C) Explain Functional Dependency of the data with example. **(5)**
(D) Describe various strategies by which organizations can get into Data Warehousing. **(5)**

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Enumerate and explain the steps to import metadata from Oracle Data Source. **(5)**
(B) List major components of Oracle Warehouse Builder. Also describe its Architecture. **(5)**
(C) Describe the importance of OWBSYS Schema. **(5)**
(D) What are Data Objects? Explain various functions of Data Editor. **(5)**

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain about Cube and Dimensions with example. **(5)**
(B) What are the various windows available in Data Object Editor? Briefly explain any two of them. **(5)**
(C) Explain the steps to create dimension using Dimension Wizard. **(5)**
(D) Define what is Slowly Changing Dimension? Explain type2 and type3 Slowly Changing Dimensions with an example of each. **(5)**

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain staging and its advantages and disadvantages. **(5)**
(B) Explain Key Lookup Operator with example. **(5)**
(C) Explain the Pre-Post-Processing Operators. **(5)**
(D) What are the attribute groups present in Joiner Operator? Explain the steps to connect source tables to target using joiner operator. **(5)**

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Which attributes are used in a cube to represent its dimensions? Also discuss the naming conventions used for these attributes. **(5)**
(B) What is the role of transformation operator in a mapping? Describe SUBSTR Transformation Function. **(5)**
(C) What are External Tables? Explain the steps to create an External Table. **(5)**
(D) Write short notes on Object Validation and Code Generation. **(5)**

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain Data Density and Data Sparsity in Multidimensional Cube with example. **(5)**
(B) Briefly explain various Metadata Change Management features in OWB. **(5)**
(C) Discuss Multidimensional Online Analytical processing. **(5)**
(D) Explain the directions and matching strategies to synchronize a mapping operators with its Repository Operator. **(5)**

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)	Briefly explain Granularity and Additivity of facts.	**(5)**
(B)	What is a Listener? Explain concisely the steps to configure a Listener.	**(5)**
(C)	Explain Surrogate Keys with an illustrative example.	**(5)**
(D)	Define Data Flow Operators. Explain the role of aggregators and filters in ETL Mapping.	**(5)**
(E)	Explain the step to define constant values through Constant Operator.	**(5)**
(F)	Explain Real-Time Analytical Processing.	**(5)**

Mumbai University

[CBSGS – 75:25 Pattern] (October – 2016)

PAPER - IV

ELECTIVE

IPR AND CYBER LAWS

Time: 2 ½ Hours   **Total Marks:** 75

N.B.: **(1)** *All Question are Compulsory.*
     (2) *Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.*
     (3) *Answer To The Same Question Must Be Written Together.*
     (4) *Number To The Right Indicates Marks.*
     (5) *Draw Neat Labeled Diagrams Wherever Necessary.*
     (6) *Use of Non – Programmable Calculator is allowed.*

Q.1   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   What is Intellectual Property? What are Intellectual Property Rights? Explain.   **(5)**
(B)   What is a Patent? Why are patents necessary? What rights does a Patent owner have?   **(5)**
(C)   What is Copyright? Enumerate the characteristics of Copyright.   **(5)**
(D)   What is Trademark? Enlist the feature of Indian Trademark Act.   **(5)**

Q.2   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   What is Software Privacy? How can Software be protected?   **(5)**
(B)   Explain the principles of Data Protection detail.   **(5)**
(C)   Explain the articles of WIPO Copyright Treaty adopted in 1996.   **(5)**
(D)   Explain in detail the agreement on trade-related aspects of Intellectual Property Rights.   **(5)**

Q.3   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   Explain the transfer of patent rights in the form of assignment.   **(5)**
(B)   How is Goodwill protected through copyright? Explain.   **(5)**
(C)   What are the rights conferred by Registration of Trademark? What are its limitations?   **(5)**
(D)   What are the rights granted for registration of design?   **(5)**

Q.4   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   Discuss the advantages and disadvantages of Intellectual Property Licensing.   **(5)**
(B)   What is Licensing Agreement? Explain its different types.   **(5)**
(C)   Discuss the enforcement of IPR with reference to Border Security Measure.   **(5)**
(D)   What is Technology Licensing? Summarise the six fundamental ideas of technology licensing. **(5)**

Q.5   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   What are Domain Name Disputes? Explain the Uniform Domain Name Disputes Resolution Policy.   **(5)**
(B)   What is Digital Signature? Why is it required? How are Digital Signature verified?   **(5)**
(C)   What are Cybercrimes? Explain few Cybercrimes.   **(5)**
(D)   Explain the issues with Hyperlinking, Deep Linking and fruxning in websites.   **(5)**

Q.6   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   Explain the chapter 3 of IT Act, 2000, "Electronic Governance".   **(5)**
(B)   What is Cyber Appellate Tribunal? What are its Powers?   **(5)**
(C)   Discuss the Malaysian approach to Cyber Laws.   **(5)**
(D)   What are the conditions under which intermediary gets exemption from liability?   **(5)**

Q.7   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   What are Design Rights? Enumerate the basic principles of Design Rights.   **(5)**

(B)   Discuss the Copyright issues in Digital Media.   **(5)**

(C)   What are the defences available in case of infringement of designs?   **(5)**

(D)   Explain the Civil and Criminal remedies in enforcing Intellectual Property Rights.   **(5)**

(E)   Explain the copyright issue in India. Explain the Copyright in the World Wide Web.   **(5)**

(F)   Explain the issues in Cyber Evidence Management.   **(5)**

Mumbai University

Question Paper

[CBSGS – 75:25 Pattern]
(October – 2016)

PAPER - IV

ELECTIVE

Project

Management

Time: 2 ½ Hours
<div align="right">

Total Marks: 75
</div>

N.B.: **(1)** *All Question are Compulsory.*
  (2) *Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.*
  (3) *Answer To The Same Question Must Be Written Together.*
  (4) *Number To The Right Indicates Marks.*
  (5) *Draw Neat Labeled Diagrams Wherever Necessary.*
  (6) *Use of Non – Programmable Calculator is allowed.*

Q.1 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) What are the key practices that improve Overall Software Quality? **(5)**
(B) Explain predominant cost estimation process. List the attributes of good software cost estimate. **(5)**
(C) List Boehm's top ten principles of Conventional Software Project Management. **(5)**
(D) What are the five fundamental parameters of Software Cost Model? **(5)**

Q.2 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) Explain the modern process approaches for solving tap ten risks in the conventional process. **(5)**
(B) Explain the importance of software architecture. State the three different aspects of software architecture from management perspective **(5)**
(C) Give a brief account of Management Set Artifacts. **(5)**
(D) Explain the primary objectives and essential activities for the elaboration phase. **(5)**

Q.3 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) With the help of diagram, explain the workflow of an iteration. **(5)**
(B) Explain the four Major Milestones in a Project Life Cycle. **(5)**
(C) Define WBS. Write a short note on evolutionary WBS. **(5)**
(D) Write short note on periodic status assessment. List the contents of status assessment reviews. **(5)**

Q.4 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) What are the main features of each default project organization? List the responsibilities of Software Management Team. **(5)**
(B) Explain the different states through which the project environment artifacts evolve. **(5)**
(C) Discuss organization's infrastructure from phase automation perspective. **(5)**
(D) State the responsibilities of PRA and SEEA. **(5)**

Q.5 **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A) What are the three fundamental sets of Management Metrics? Explain any two Management Indicators. **(5)**
(B) <u>Define the following terms:</u> **(5)**
  (i) *Change Traffic*
  (ii) *Breakage*
  (iii) *Rework*
  (iv) *MTBF*
  (v) *Modularity*
(C) Explain the process discriminators that result from differences in Stakeholder Cohesion. **(5)**
(D) What are the different ways to measure scale of the project? Compare Trivial-Sized Projects and Moderate-Sized Projects. **(5)**

<div align="right">

[TURN OVER]
</div>

MUMBAI UNIVERSITY
QUESTION PAPER

PROJECT MANAGEMENT
(**O**CTOBER – 2016 | **CBSGS** – 75:25 **P**ATTERN)

B.Sc.IT
(**S**EMESTER – VI)

Q.6   ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A)   Explain the nine best practices of software management listed by "Airline Software Council".   **(5)**

(B)   Discuss continuous integration approach of Modern Project Management.   **(5)**

(C)   Discuss some indicators of a successful transition to a modern culture focused an improved software business performance.   **(5)**

(D)   Give an account of Next-Generation Software Cost Estimation Models.   **(5)**

Q.7   ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

(A)   Explain how object oriented technology contributes to software economics. List Booch's reasons for the success of object-oriented projects.   **(5)**

(B)   Define Artifact. Write a short note on Vision Document and Software User Manual.   **(5)**

(C)   Discuss Bottom-Up Approach for cost and schedule estimating process.   **(5)**

(D)   Write short note on configuration baseline.   **(5)**

(E)   Explain the basic characteristics of a Good Metric.   **(5)**

(F)   Compare the characteristics of conventional software process with modern iterative development process framework.   **(5)**